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*ASSOCIATE*  
 29. SIBERIAN BRANCH OF THE ALL-UNION SCIENTIFIC-RESEARCH  
INSTITUTE OF GAS AND ARTIFICIAL LIQUID FUEL *Synthetic (SibVNIIGI)*

Engineer A. N. Bashkirov,  
 Deputy Director of the Institute

The Siberian branch of VNIIGI was organized in 1934, using as a base the Siberian Scientific-Research Complex Carbon-Chemistry Institute.

SibVNIIGI has revealed the quality of the coal of a number of little-known regions of Siberia. The coal of the Kuznets, Khakass-Minusinsk, Cheremkhovka, and recently the Bureya basins has been subjected to investigation. Study of the coal of the Gorlovka and Listvyanka strata has made it possible to characterize such coal as anthracite which is of particular interest as raw material for the ferrous casting and electrical generating industries. Study of raw material for the coal-distillation industry has been performed on a whole series of new strata of coal (the coal of Achinsk, Plotnikovka, Cheremkhovka, and other regions). In addition, these projects have made it possible to expand considerably the Siberian supply of cooking coal, which was of great importance in the construction of the Stalin Steel Mill (Kuznets Basin).

Work has been performed on the establishment of methods of detecting phosphorus in coal. The importance of this research stems from the importance of study of the question of the phosphorus-content of the coals of the Kusbass and other basins which

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serve as bases for obtaining the cokes used in the production of special kinds of cast-iron and steel with minimum phosphorus-content.

The work of SibVNIIGI on the oxidizability of the coals of the Kuzbass is acquiring particularly great significance in connection with the spontaneous combustion of coal and mine fires in the Kuznets Basin. In addition a whole number of problems associated with the construction of the First Coal-Distillation Plant in Kemerovo are being worked out.

Extensive projects are being conducted on the study of the chemical composition of the bensines and kerosenes of primary tars.

A project has been performed on the study of the products of self-oxidation of bensines of primary tars, the project being associated with the question of stability of benzines and kerosenes.

There is great significance on projects performed on the purification of bensines of primary tars. Bensines obtained from sapropelite coals can be purified with 1 to 2 percent sulphuric acid.

In any case, this problem has at present been solved for products of Bazas sapromixites. In the purification with sulphuric acid of bensines and kerosenes obtained from humus coal a number of considerable difficulties have been discovered.

Purification with sulphuric acid involves great losses of the product and expenditure of sulphuric acid; at the same time the purified products do not possess sufficient stability. The work of SibVNIIGI has demonstrated the complete possibility of using for this purpose zinc chloride, expenditure of which is insignificant.

Further, study has been made of the products obtained from partial coking, which cannot be used directly as liquid fuel, but can at the same time be greatly valuable as raw material for other branches of industry. Among these products it is necessary first of all to classify the phenols, the bases of certain tars -- paraffin, etc. Here may be noted projects performed with phenols recovered from the tars of Lena coal and Barzas sapromixites, which have proved the possibility of utilization of them as raw material for various types of production.

In studying the tar of Achinsk coal a paraffin of high quality was recovered by methods differing little from those ordinarily used in lignite production.

Plastometric study of coal by Engineer Sapozhnikov's method has been performed for 300 plastic samples of the coal of all regions of the Kuznets Basin, with extremely valuable data for making up the furnace-charge of coke-by-product plants being obtained.

In addition, a great deal of experimental data has been

obtained for study of the coking properties of the coal of various regions of the Kuznets Basin.

Also interesting is the research on the reactive capacity and combustibility of cokes from various coals of the Kuznets Basin and determination of the tar products.

There is great practical interest in a project on the recovery of coumarone resin from the coal-tar naphtha of the Kemerovo Coke By-Products Plant.

Since partial coking of coal as a method of recovering liquid fuel does not in any degree assure all the requirements of Siberia for motor fuel, the solution of this problem lies very clearly in the direction of the processing of coal by the method of destructive hydrogenation. With this method, the process of liquefaction is accomplished under a pressure which reached 200 atmospheres at a temperature of about 450 degrees. The hydrogen necessary for the reaction is obtained by SibVNIIGI at a special installation by means of electrolysis of water; all preparatory stages for the commencement of this work have been completed, and experimentation is being undertaken.

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29. SIBERIAN BRANCH OF THE ALL-UNION SCIENTIFIC-RESEARCH  
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INSTITUTE OF GAS AND ARTIFICIAL LIQUID FUEL (SIBVNIIGI)  
Novosibirsk, ul. Kol'tsova, 90

SIBVNIIGI is under the All-Union Scientific-Research Institute of Gas and Artificial Liquid Fuel (in the Glavgaz system, NKTP).

Director -- Zaydman, Ya. I.

Technical Director -- Engineer Bashkirov, A. N.

SIBVNIIGI CONDUCTS SCIENTIFIC-RESEARCH WORK IN THE FIELD  
OF THE RECOVERY FROM MINERAL COAL OF ARTIFICIAL  
LIQUID FUEL, AND THE STUDY OF SIBERIAN COAL

Scientific Departments

Partial Coking and Study of the Products of Partial Coking,  
Manager Kuryndin, K. S.

High Pressures, Manager Chufarovskiy, V. N.

Gases (Including the Gasification Group), Manager Bashkirov,  
A. N.

Study of (Raw Material) Coal, Manager Zil'berg, G. A.

Overall Number of Workers -- 86

Scientific Workers -- 22

Annual Budget -- 621,000 rubles

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